PATENTING SOFTWARE RELATED INVENTIONS IN SRI LANKA: COMPARATIVE ANALYSIS WITH REFERENCE TO UNITED STATES OF AMERICA, UNITED KINGDOM AND EUROPEAN UNION

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ABSTRACT

Patenting software is a hotly debated topic in the current intellectual property (IP) context because of the expanding nature of software industry has caused it difficult to classify what kind of IP protection would be granted to protect software related inventions. It cannot be identified a consensus on patenting software in international level as well as domestic IP paradigms. Some legal systems suggest copyrights protection while other systems afford patent protection to software. Also, the existing debate on this issue recommends software cum patent protection and sometimes a sui genaris system of protection on software. Inevitably, the software can be misappropriated in a variety of circumstances and as a result of that the software has become vulnerable in free marketplaces. Therefore, the IP law should be expanded to provide protection to the software by refraining misappropriation of ideas, so as to protect the economic rights of the creators. This paper mainly aims to discuss the patentability of software-related inventions under the preview of existing IP law in Sri Lanka. By unpacking patentability requirements and exploring capabilities of patenting software in Sri Lankan context, the author aims to critically examine the Sri Lankan situation, with examples drawn from United States of America (USA), United Kingdom (UK) and European Union (EU) jurisdictions for the purpose of extracting suitable models from those more sophisticated jurisdictions, in order to enhance Sri Lankan law in this regard. Finally, the paper focuses on proposing suitable legal and policy guidelines that are applicable to Sri Lanka in the event that the judiciary would be faced with the controversial issue of patenting software in future. Nonetheless, patentability of software in Sri Lanka can be considered as a virgin area of research, yet to be explored, researched and developed. Thus, the author believe that the intended outcomes of this research would pave the way for enhancing existing legal framework of patentability of software in Sri Lanka.

Keywords: patentability of software, copyrights, *sui genaris*

Introduction

'one is aware the need that useful knowledge should be disclosed.it may be that on controlled societies, one reason for the apparent lack of development of technology is the restriction on disclosure. But it is also true that some protection favours innovation and that encouragement of a discoverer or developer enhances a basic human motivation for inventiveness'

(*Structural Dynamics v. Engineering Mechanics*[1])

Patentability of software is a hotly debated topic in the current intellectual property (IP) context. With the rise of computer technology in recent decades it has become necessary to provide suitable IP protection to the software industry. As pointed out by many scholars, the misappropriation of ideas in a free competitive market is simple and inevitable.[2] Especially, software may be misappropriated in a variety of circumstances and those would become vulnerable in free marketplaces. Therefore, to evade such unfair practices the law should be expanded to provide economic incentives to the owners or the creators of the software. This idea is the root factor for extending IP protection to protect software. The commercial value, as well as the expanding nature of software, has caused much difficulty in classifying software within a specific category of IP protection.[3] Therefore, according to some commentators, software can be protected under copyrights[4], patents[5], both copyrights and patents[6] trade secrets[7]or

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[1] 401 F. Supp. 1002 (1975)

[2] Henry Carr and Richard Arnold, *Computer Software: Legal Protection in the United Kingdom* (2nd edn, Sweet & Maxwell 1992) 5.

[3] AG Gonzales, 'The Software Patent Debate' [2006] Journal of Intellectual Property Law and Practice, 1.

[4] J Dunn, 'Defining the Scope of Copyright Protection for Computer Software' (1986) 38 Stanford Law Review, 497

[5] E Gartton, 'Should Patent Protection be Considered for Computer Software-Related Innovations' (2002) 7 Computer Law Review and Technology Journal, 223

[6] R Widdison, 'Software Patent Pending?' [2000] The Journal of Information, Law and Technology, 3

[7] DW Carstens, 'Legal Protection of Computer Software: Patents, Copyrights and Trade Secrets' (1992) 20 Journal of Contemporary Law, 13

even a *sui genais* software right[8]. Patent protection of computer software is the most controversial protection when considering the debatable passage and practices relating to patenting software in international, as well as domestic IP paradigms.

When analyzing the existing IP regimes in the world, it can be found some jurisdictions which protect software through patents. However, the prevailing Sri Lankan IP law neither expressly excludes nor accepts the patentability of software. Also, due to the lack of researches on this particular area it is worthwhile to engage in academic research on patenting software, so as to widen the existing knowledge. Therefore, the motivation of this study is to search the possibilities of expanding patent law to protect software in Sri Lankan context. Furthermore, it aims to highlight prospectus challenges as well as the benefits of patenting software.

This paper mainly aims to discuss the patentability of software-related inventions under the preview of existing IP law in Sri Lanka. Firstly, this paper examines the nature and scope of software and software related inventions. Secondly, it analyses the debate on protecting software through copyrights and patent law. Thirdly, it is aimed to discuss the arguments on patenting software. By unpacking patentability requirements and exploring capabilities, the author aims to critically examine the Sri Lankan situation, with examples drawn from United States of America (USA), United Kingdom (UK) and European Union (EU) jurisdictions. Finally, the paper focuses on proposing suitable legal and policy guidelines that are applicable to Sri Lanka in the event that the judiciary would be faced with the controversial issue of patenting software in future.

THEORETICAL FRAMEWORK

The economic theory and utilitarian theory are central to this paper. The economic theory enshrines the idea that the owner of an intellectual property should be given a monopoly over his or her intellectual creations, in order to get economic advantages. Thus, patenting software would also be helped to protect the rights of the owners by providing advance protection to the software-related inventions. Furthermore, the limited monopoly granted by patent protection would immensely be an incentive to an owner to engage in further inventions who engage in developing software and related technologies. Also the utilitarian theory which justifies the striking down a balance between the rights of the owners and general public is used as a theory in this discussion. It is evident that, while economic theory heavily tilted on justifying the economic rights of the owners, in contrast the utilitarian theory emphasizing the need of having a fair balance between the conflicting interests of the owners and general public. Thus, this paper is constructed on the rationales of those theories.

METHODOLOGY

This research is a normative research which primarily based on an extensive literature review. The research comparatively studies United States, European Union and United Kingdom jurisdictions of patenting software in order to unveil the existing practices in various jurisdictions in the world. The purpose of selecting comparative methodology is to identify the recent developments in this field and discuss it's applicability into the Sri Lankan context.

As primary sources, international instruments, legislations such as Agreement on the Trade Related Aspects of Intellectual Property (TRIPS), European Patent Convention (EPC), Patents Act 1977 United Kingdom and Intellectual Property Act No 36 of 2003 in Sri Lanka have been used in this research. Furthermore, journal articles, web resources and text books have been referred as secondary sources in order to enrich the research.

SOFTWARE AND SOFTWARE-RELATED INVENTIONS

Though there are thousands of definitions on term 'Computer software' it can simply be defined as a collection of code instructions. These instructions are written in a language which can be read by the computer.[9] In other words, the entire notion behind software can be conceptualized as 'a set of commands written by a programmer in a chosen computer language that can be run through a complier'.[10] However, it is clear that the software[11] is something that originated from the intellectual capacity of human mind. Therefore, software and software related inventions are capable of providing IP protection. The most noteworthy fact here is that the uniqueness of the computer software based on its literary, as well as functional/technical application. As Gonzales points out 'software is not a monolithic work: is possesses several elements that can fall within different categories of IP protection'.[12]Hence, it can be argued that IP protection should be considered akin to the nature and the applicability of the particular software.

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[8] JC Philips, 'Sui Genaris Intellectual Property Protection for Computer software' (1992) 60 George Washington Law Review,997

[9] CUI, 'The Language List: Version 2.4' (23 January 1995) <http://cui,unige.ch/OSG/info/langlist/intro.html.> accessed 20 September 2016

[10] KL Durell, 'Intellectual Property Protection for Computer Software: How Much and What Form is Effective?' (2000) 8 International Journal of Law and Information Technology 231, 235

[11] Software can be possible to divide three board categories namely, specialist application programs, general commercial programs and mass market programs. Carr& Arnold (n 2).

[12] Gonzales (n 2)

COPYRIGHTS V. PATENT PROTECTION ON SOFTWARE

As correctly pointed out by Durell;

> At the present, protection of software is effected through an application of copyrights and/or patents. The two forms of IP protection are essentially involved in a tug-of-war over the provisions of adequate innovative safeguards.[13]

Thus, before stepping through the idea of patentability of software, it is worthwhile to have a glimpse of copyright protection on software. As stipulated in USA Code Title 17, section 101; '[software] is a set of instruction to a computer that bring about a certain result'. These instructions are initially expressed as a source code. Then the written expression of the source code can be considered as a literary work and may be logically defined as being subject to copyright protection.[14] It is accepted that computer programs are protected as literary works within the meaning of Article 2 of the Berne Convention for the Protection of Literary and Artistic Work 1886[15]. Nonetheless, domestic laws also provide copyright protection to the computer programs.[16] In the case of *Apple Computer, Inc. v. Makintosh Computer Ltd*, the Canadian Supreme Court held that 'hexadecimal version of the programme which has been saved on a microchip should still be regarded as software and thus it can be protected by section 3(1) of the Copyright Act'.[17]

Then a possible question may arise whether the functional characteristics of software can be protected by copyrights or not? The answer would be negative in the sense on the reason that non-literal aspects of software infringements are not protected by copyrights. In such a situation copyrights diminish its value as those are not wide enough to cover up functional aspects of a software. This idea was connoted by Pumfrey J in *Navitaire v. EasyJet* case by the following words;

> Copyright protection for computer software is given but I do not feel that the court should be astute to extend that protection into a region where only the functional effects of a programme are an issue. There is a respectable case for saying that copyright is not, in general, concerned with functional effects…[18]

Therefore, a need arises to protect the functional aspect of software by extending patent protection on software. When considering the patents, the monopoly is given over the industrial application as opposed to the expression of idea.[19] Hence, it can be argued that where a programme is novel, it has an inventive step and industrial applicability that functional/technical aspect of the software would be worthwhile of protecting by patents. When considering the American jurisdiction, we can see that they had already welcomed patentability of software by allowing a recalculating process (software) which is connected to control the actual temperature inside a mold which is used to cure uncured synthetic rubber into cured precision products.[20] Subsequently, the USA, UK and other countries were engaged in expanding the canvas of patenting software. Hence, it is clear that software can be protected by either copyrights or patents.

ARGUMENTS FOR AND AGAINST OF PATENTING SOFTWARE

There are agreements as well as disagreements on patenting software. It has been pointed out that if a computer programme contains elements that meet patentability requirements, it should be awarded patent protection.[21] Patent rights are commonly justified on the ground that those can be considered as a contract between inventors and society. It indicates that the investors are granted a monopoly limited to a specific time period on the basis of disclosure of the invention. Nonetheless, if such software is protected under trade secrets or copyrights working the software can be more difficult.[22]

This advantage is clearly demonstrated in the sphere of Open Source Software (OES) and Open Educational Resources (OER) software field. In this particular field the source code and sometimes the object code may be publicly accessible and anyone can develop more sophisticated software by using disclosed information.[23] But the

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[13]Durell (n 10) , 233

[14] Ibid 2

[15] See Article 4 of the WIPO Copyright Treaty, 1996

[16] See Section 2 of the Canadian Copyright Act.

[17] [1990] 2 S.C.R. 209 at 215.

[18] [2004] EWHC 1725 (Ch) [para. 94]

[19]Carr& Arnold (n 2) 13

[20] *Diamond v. Diehr* 67 L Ed 2d 155 [1981]

[21] Gonzales (n 2) 11

[22] Ibid 11

[23] See 'www.openoffice.org', <http://www.openoffice.org/license.html> accessed on 21 September 2016, it expressly mentions that 'You can freely modify, extend, and improve the OpenOffice.org source code. The LGPL requires that all changes must be made available if published.'

source code and object code of the newly developed software should be publicly available to others to access. Thus, patenting software can be justifiable in the name of grater social good.[24]

Furthermore, patentability of software is benefitted to the large firms, as well as small and medium enterprises (SMEs). Most of the SMEs need patent protection if they are to enhance their profitability.[25]Thus, it is evident that software patents are aimed to stimulate the software related inventions.

However, there are acceptable disadvantages we can identify in the field of software patenting that lead to counterbalance the advantages. There is no international consensus on this particular matter and one can argue that the software patents are pushed by greedy patent lawyers whose goal is to destroy copyright protection on software.[26]As connoted by the supreme court of USA;

> It was never the object of patent laws to grant a monopoly for every trifling device, every shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic operator in the ordinary progress of manufacturers.[27]

Patents should be granted not on mere advancement of an existing prior art, but on a true contribution which helps to solve a specific problem in the field of technology. As Carr eloquently explains, where a programme is novel, non-obvious and of commercial important, patent protection is unquestionably of great advantage.[28] Thus, it can be argued that if the software fulfills the criterions of patentability, patent protection can be extended on that particular software.

AN OVERVIEW OF SRI LANKAN LAW RELATING TO PATENTS AND PATENTABILITY OF SOFTWARE-RELATED INVENTIONS

Patents are legal instruments used in economic life.[29] The legal protection envisaged in a patent gives its owner the right to exclude others from making, using, selling, offering for sale or importing the patented invention for the term of the patent, which is usually 20 years from the filling date, and in the country or the countries concerned by the protection.[30] The most important fact is that if there is no patent protection the new ideas can easily be copied and anyone in the free market would be able to exploit the economic rights of the inventor. As Sampath very correctly pointed out;

> A patent thus gives its holder a lengthy breathing space to enable the innovation to be developed and marketed without competition, expect from non-infringing substitutes. In this way, the patent holder can recoup his investment.[31]

Sri Lankan law relating to patent is embedded in the Part IV of the Intellectual Property Act no. 36 of 2003 (IP Act). Section 62 (1) of the IP Act defines 'invention' as an idea of an inventor which permits in practice as the solution to a specific problem in the field of technology. Furthermore, it recognizes the patentability of inventions relating to product or process.[32]Basic requirements for granting a patent are well defined in the Section 63 of the IP Act.

   I.   New (novelty)
   II.   Inventive step (non-obviousness)
   III.   Industrial applicability

are the three main criteria to be satisfied by an invention to be granted a patent.[33]Pursuant to section 64(1) of the IP Act 'an invention is new if it is not anticipated by prior art. Moreover, a prior art shall consist of everything disclosed to the public, anywhere in the world, by written publication, oral disclosure, use or in any other way,

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[24] M Valimaki, 'A Practical Approach to the problem of Open Source and Software Patents' (2004) 26 EIPR 12, 523.

[25] Gonzales (n 2), 8

[26] <http://www.nosaoftwarepatents.com/en/m/dangers/index.html> accesses on 21 September

[27] *Atlantic Works v.Brady* (1882)

[28] Carr (n 2) 14

[29] Organization for Economic Co-operation and Development (OECD), Patent Statistic Manual (OECD 2009) 18.

[30] Ibid 18.

[31] N.S. PunchiHewage, *Promoting a Second-Tier Protection Regime for Innovation of Small and Medium-Sized Enterprises in South Asia: The Case of Sri Lanka*,(Nomos Publishers, Baden-Baden, Germany 2015) 26 MIPLC Studies, at p.20. (ePDF). <http://www.nomos-elibrary.de/index.php?doi=10.5771/9783845259505&l=en> accessed on 20 September 2016.

[32] See Section 62(2) of the IP Act

[33]Article 27(1) of the Agreement on the Trade Related Aspects of Intellectual Property (TRIPS) requires that 'patents shall be available for any inventions that are new, involve an inventive step and are capable of industrial application'. It is amply clear that the Sri Lankan IP law has adopted a similar approach to the TRIPS agreement.

prior to the filling or, where appropriate, priority date of the patent application claiming the invention.[34] Therefore, it is clear that Sri Lankan patent law requires an invention to meet 'absolute' or 'universal novelty' standards as the first prerequisite of patentability.[35]When comparing with USA's relative novelty[36] requirement, it can argued that the Sri Lankan novelty requirement is somewhat high threshold to achieve.

When analyzing the involvement of an inventive step, patent application's non-obviousness is viewed through the lens of a person having ordinary skills in the art.[37] This requirement is very similar to the other patent jurisdictions and immensely serves as a guardian to patent protection. Since, Sri Lankan patent jurisprudence has a few experiences on interpreting inventive step, it is worthwhile to consider the UK practice on inventive step introduced by *Windsurfing International v. Tabur Marine* case.[38] In that sense satisfying inventive step is rather stringent than novelty.

As stipulated in Section 66 of the IP Act, 'an invention shall be considered industrially applicable if it can be made or use in any kind of industry'. The burden of proof of the third criterion is rather less than other two criteria discussed earlier.

Though all these three criterions are met, if such an invention categorizes the meaning of excluding subject matters of patentability, the patent would not be granted to that invention.[39]Inter alia scientific methods, mathematical methods, schemes rules or methods for businesses are considered as excluding subject matters of patentability.[40]The Sri Lankan position under existing IP Act is that there is no exclusion of computer programmes from patent rights.[41]The same idea has been reaffirmed by Karunaratne in the following words;

> …even though patenting of computer programme is a controversial subject, it should be noted
> that a computer programme may be patented if it meets the requirements of patentability.[42]

Thus, the Sri Lankan position can be summarized in terms that though the requirements of patentability are high in Sri Lankan context, still there is a room for granting patents for software. However, the existing IP regime of Sri Lanka neither prohibits nor accepts the patentability of software expressly. Thus, it is worthwhile to analyze some other selected jurisdictions in order to propose a comprehensive policy framework to Sri Lankan IP paradigm.

PATENTING SOFTWARE: SOME OTHER SELECTED JURISDICTIONS

As discussed earlier, existing Sri Lankan law does not provide a strong legal framework for patenting software. Thus, a need has arisen to implement a rather pragmatic legal framework which is capable to cater to the economic motives of software inventors. Thus, this chapter aims to dive through some other selected jurisdictions (USA, EU, United Kingdom) to extract possible suggestions to enhance Sri Lankan law. Further, it also intended to compare and contrast patent legislations, patent examination guidelines and case law pertaining to software patenting very briefly in the selected jurisdictions.

The European Patent Office (EPO), United States Patent and Trademark Office (USPTO) and Japanese Patent Office (JPO) are the three patent offices which covered about 84% of the patents worldwide and play a crucial role in forming world patent policies.[43]

As pointed out by the commentators, the range of patentable inventions in the USA has expanded in the past twenty years, specifically with respect to the treatment of computer programs.[44] As USA has a constitutional mandate which supports an innovative culture,[45] the legal requirements for patentability normally present very little difficulty[46]. As stipulated in Section 101 of the 35 U.S.C., an invention should be useful, new and

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[34] Section 64(2)(a)

[35]PunchiHewage (n 32) 87

[36] Prior art available any country will destroy novelty but use of the invention outside the country will not.

[37] Section 65 of the IP Act

[38] (1985) RPC 59

[39] Section 62(3) of the IP Act

[40] ibid

[41] SDB Abeyaratne, *Introduction to Information and Communication Technology Law* (Colombo 2008) 26

[42] DM Karunaratne, Elements of Law of Intellectual Property in Sri Lanka (1 Edn, Sarasavi2010) 139

[43] J Park, 'Has Patentable Subject Matter Been Expanded? A Comparative Study on Software Patent Practices in the European Patent Office, the United States Patent and Trademark Office and the Japanese Patent Office' (2005) 13 International Journal of Law and Information Technology' 3, 336

[44] CD Freedman, 'Software and Computer Related Business- Method Inventions: Must Europe Adopt American Patent Culture?' (2000) 08 International Journal of Law and Information Technology 285, 300

[45] Article 1, Section 8, Clause 8 of the US Constitution 1887

[46] JR Kuester AK Moceyunas, 'Patent for Software-Related Inventions' (1997) 3 Multimedia and Technology Licensing Reporter 11

unobvious.[47] Furthermore, three categories of subject matter, namely laws of nature, natural phenomena and abstract ideas, have been excluded from patenting in USA.[48] Nonetheless, according to the Guidelines for Examination of the USPTO, post-computer process activity and Pre-computer process activity are considered statutory subject matter and both are called 'Safe Harbors' for patentability.[49]Furthermore, statutory structure of USA provides that 'a computer readable medium encoded with a data structure is patentable if it defines the structural and functional relationship between the data structure and the computer.[50] Thus, it is clear that the statutory structure of the USA supports granting patents on software while having a few limitations.

This, welcoming approach has further been extended by the involvement of judicial interpretations on software patenting. We can identify a trilogy of decisions at an early stage in the development of case law for software patents in USA.[51]In *Gollschalk v. Benson* case[52]the court held that 'mere mathematical formula cannot be patented and in *Parker v. Flook*[53] case it was connoted that 'algorithm cannot support a patent unless there is some other inventive concept in its application'. However, in the landmark *Diamond v. Diehr*[54] case it was pronounced that 'processes or apparatus that use computer programs as a component of the overall invention found to be a patentable. Subsequently, to the Diehr case, in the case of *In Re Iwahashi*[55] a software relating to apparatus for voice pattern recognition, in *Arrhythmia Research Technology v. Corazonix Corporation*[56] case method for analyzing electrocardiograph signals were granted patents on software. Nonetheless, in USA we can identify Freeman-*Walter-Abele test*[57] which mandates if an algorithm is applied in any manner to physical elements of process,the steps would render that algorithm to be considered as a patentable subject matter.[58] After analyzing all these cases laws in can be argued that the USA courts have placed much weight on the practical utility rather than category of the claim.[59]Even the Federal Circuit of USA has upheld the position that 'a practical application of a mathematical algorithm, formula or calculation (which compromised a computerized business method can be patentable) because it produces 'a useful, concrete and tangible result'.[60] Thus it is clear that the USA position in patenting software can be considered as a welcome approach towards this emerging trend in IP paradigm.

While the USA has been allowing practically allowing unlimited patentability of software in recent years, the EU is following a different path.[61] The main reason to this slightly different approach could be Article 52 (2) (c) of the European Patent Convention (EPC). It stipulates that 'schemes, rules and methods for performing mental acts, playing games or doing businesses and programmes for computers' are as non-patentable subject matters. The general legal requirements for patentability are laid down in Article 52 (1) of the EPC and quite similar to the USA and Sri Lankan context.[62] The most important fact is that the European Patent Office (EPO) guidelines also highly consider the 'technical character' of an invention while inspecting patentability.[63] Thus it is clear that in the EU context the 'technical character' of the invention is rather important than the form of the claim.[64] Thus, it is clear that the legal letters in the Europe set out somewhat rigid criteria than USA. Though, the EU is expected to harmonize national standards for software patentability by adopting 'EU Directives on Software Patentability' in 2002, it watered down EU Parliament in 2005. Thus, the legislative path of software patentability is still having the same stand as the EU.

On the other hand, case law demonstrates that the courts are heavily the ground of the proof of technical character of the invention. In *VICOM application* the EPO Board of Appeal, held that; 'in a situation where a computer process has a merely abstract and mathematical effect are distinguished from those which a computer process has a technical effect and should therefore be subject to patentability.[65]Subsequently, in *Merrill Lynch* case[66], it was

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[47] See Section 103 of 35 U.S.C (test of non-obviousness)

[48] Park (n 44) 360

[49] Examination Guidelines for Computer-Related Inventions (February 28 1996) USPTO

[50] Manual of Patent Examination Procedure (MPEF) § 2160, IV B I. (a), Rev 1, Feb, 2003, USPTO

[51] Park (n 44) 350

[52] 409 U.S. 63, 175 USPQ 673 (1972)

[53] 437 U.S. 584, 198 USPQ 193 (1978)

[54] 450 U.S. 175, 209 USPQ 1 (1981)

[55] 888 F. 2d 1370 (Fed. Cir. 1989)

[56] 985 F. 2d 1053 (Fed. Cir. 1992)

[57]This two-step test was developed by three cased decided by Court of Appeal of the Federal Circuit in USA in, *In Re Freeman* 573 f. 2d 1237, *In re Walter* 618 F.2d 758 and *In re Abele* 684 F.2d 902.

[58] *In re Lowry* 32 F. 3d 1579 (Fe. Cir 1992)

[59] Park (n 44) 354

[60]*State Street Bank & trust Company v. Signature Fin. Group* 149 F 3d1368

[61] Gonzales (n 2) 3

[62] Article 52(1) of the EPC is read as follows; 'the invention must have an industrial application, novelty and an inventive step'

[63] Articles 27(1) and 29(1) of the EPO guidelines

[64]Park (n 44) 345

[65] (1987) 2 EPOR 74

stated that 'there must be some technical advancement on the prior art in the form of a new result'. Furthermore, in the case of *IBM*[67], the court held that 'a computer programme is not excluded from patentability, irrespective of whether it is claimed by itself or as a record on a carrier'. Thus, it clear that in EU also, software with a technical character has a possibility to be patented.[68] Therefore, it can be concluded that if a software's implemented function is used to contribute to the scope of the claim and the prior art in EU, it can be subjected to the patent protection.

Even if the software is not in the heart of the invention, there has been a trend towards attempt to patent software and related inventions because many inventions now are implemented by means which include software.[69]As stipulated in Section 1 of the Patents Act 1977, if an invention is new, involving an inventive step and capable of industrial application, a patent may be granted. Nevertheless, the claim should not be an excluded subject matter under subsection 2 and 3.[70] Thus, the 'programs for a computer' also has been expressly excluded from patentability in UK.[71]As seen earlier, the EU perspectives on patenting software has changed with judicial intervention, as well as a result of EPO guidelines. The EU guidelines and decisions of EPO can be considered as a persuasive authority in UK under the mandate of Section 130 (7) of the patents act. However, it is worthwhile to have a glimpse on UK context in that of.[72]

In *Merrill Lynch's Application*, the Patent's Court[73] held that 'a data processing system for making a trading market' was not a patentable subject matter on the ground that there was nothing novel and inventive in the programme.[74]In the appeal, Fox LJ held that; 'the application was excluded since it was no more than a method foe doing businesses'.[75] However, in Gale's application[76] Nicholls LJ applying the *VICOM* rules states that, 'if an intellectual discovery which contains of a practical application associated with a technical process that can be subjected to patent protection.' Thus, the UK position is, if software addresses a technical problem either external to the computer or a technical problem in the functioning of the computer can be patentable.

After, comparing and contrasting USA, EU and UK context in patenting software, it can be concluded that all three sophisticated jurisdictions are in a process of granting patent for software more or less considering the invention as a whole, as well as technical character and the outstanding value of the claim. Thus, these perspectives could be used to propose suitable legal and policy guidelines in patenting software related inventions in the Sri Lankan context.

WHAT LESSONS FOR SRI LANKA?
As discussed earlier, Sri Lankan law relating to patent is much in lined with TRIPS and other selected jurisdictions. However, there are only few cases available in the area of patent law and they hardly deal with any substantive patent issue such as treatment of novelty and inventive step.[77]However, the existing patent law mandates rather high thresholds of patentability and thus, it would be very difficult to grant a patent on software-related invention in the existing context, though the IP Act does not expressly exclude 'computer programs' as non-patentable subject matters. Nonetheless, IP rights related to information technology, especially relating to the computer programmes, operates as global phenomenon and exceeds the territorial limitations.[78] Thus, we have to propose suitable legal and policy guidelines that are applicable to Sri Lanka in the event that the judiciary would be faced with controversial issues of patenting software in the future.

Hence, for the purpose of making the existing IP law more sophisticated and pervasiveness enough to address patenting of software related invention issues, the following two options can be offered for the policy makers. Either they can adopt a second-tier patent protection or *sui genaris* IP protection on software related patents. Software, can be protected by way of 'utility model' or the 'petty patent' system, which encompass patent

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[66] (1989) RPC 561

[67] T 1173/1997

[68] See *CFPH LLC's Application* [2005] EWCH 1589 (Pat.) and *Halliburton Energy Services v. Smith Internationals* [2005] EWHC 1623 (Pat.)

[69]Carr (n 2) 127

[70] Section 01 of the Patent Act 1977

[71] This provision encapsulates the same standards of patentability laid down in the Article 52 of the EPC.

[72] This means that the EU position can be equally apply into the UK also.

[73] [1988] RPC 1

[74] Ibid, 12 [Falconer J]

[75] [1989] RPC 561

[76] [1991] RPC 305

[77]PunchiHewage(n 32) 85

[78]Abeyratne (n 32) 26

protection with short term protection and less rigorous standards than general patent law.[79]At first this appears to respond well to software related inventions because it provides speedy option of granting patents. Therefore, such a system would be much more attractive by the software developers in the Small and Medium Size Enterprises (SMEs) in Sri Lanka.

Furthermore, it can be proposed to implement *sui genaris* IP protection to software to be granted under a single umbrella.[80] In such a situation copyrights or the patents relating to software protection can be codified under one single Act and it would be more practical and comprehensive in application. It can be enhanced with the ideas we have extracted from the more sophisticated jurisdictions on software patenting. Inevitably, such a *sui genaris* system would be an added advantage to expand the innovative culture in Sri Lanka and pave the way for economic cum social development. Therefore, the time has reached to investigate the prospectus of having sound and comprehensive legal framework in this regard.

CONCLUSION

As connoted in the given quotation, in line with the technological development, most of the countries have expanded patentable subject matter from traditional things to software related inventions. However, we cannot identify any international or regional consensus relating to patenting software. EU and UK perspective shows the necessity of 'technical character' on one hand and USA relies on 'tangible result' of granting software patents on the other. However, all three jurisdictions expressly recognize the patentability of software since it is a qualified form of protection. Therefore, all software would not be granted patent protection and the thresholds of patentability would remain in its original position. However, when analyzing the Sri Lankan law it is clear that the Sri Lankan patent law is still incubating when compared to the other patent regimes. Lack of judicial interpretations on patent law also made it difficult to identify whether software can be considered as a patentable subject matter or not. However, finally it is agreeable that the existing law Sri Lankan law is needed to be developed so as to extend the patent protection to protect software by patents. Thus, to have a tradeoff between the interests of software inventors and the general public in future, it is worthwhile to adopt a comprehensive legal policy in Sri Lanka based on the concepts of administrative workability, economic results for the inventors and encouraging dissemination of ideas pertaining to patenting software.

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[79]PunchiHewage (n 32) author propose a legal and policy framework on second-tier patents to the Sri Lankan and South Asian context. It is worthwhile to consider the software patenting issue with that author's outcome of his research particularly on the Sri Lankan context.

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